

REMARKS

Favorable reconsideration of the present application is respectfully requested.

The finality of the election of species A is noted. Applicants further note that the election requirement has been made final because “the species lack a single inventive concept due to the technical features are structurally different.” However, regardless of the merits of this assertion, Applicants note that the Office Action has not responded to the basis for the traversal of the election requirement: The present application is a national stage of a PCT application, and so PCT rules regarding unity of invention are controlling. M.P.E.P. § 1850. The patentability opinion for the PCT application does not indicate a lack of unity of invention under the PCT rules. Thus, the election requirement is improper, regardless of whether the “technical features are structurally different.”

Claims 1 and 5 have amended to further recite that the offset air-intake opening portion is formed in a surface of the body cover which is substantially parallel to a vent surface of the heat exchanger. Basis for this is evident from, e.g., Figure 1, and will be further evident from the discussion below.

The claimed invention is directed to a construction machine having an engine room which is cooled by air introduced from an air-intake opening in the body cover. Past efforts to reduce noise emanating from the air-intake opening have resulted in an increase in the height of the body cover, or have required the cooling air entering the intake opening to turn by 90° or more before reaching the engine, which has increased the air flow resistance and decreased the air flow rate (page 3, lines 13-22).

The present application is based on the recognition that the noise emitted through the cooling air-intake opening can be significantly reduced, without a significant reduction in the air flow rate, if the air-intake opening portion is formed in a surface of the body cover which is substantially parallel to a vent surface of the heat exchanger, but is offset laterally thereto

so as to protrude at least partially from the vent surface when the inside of the body cover is seen through the air-intake portion in a direction orthogonal to the surface of the body cover with the air-intake opening portion formed therein. An example of this is seen in Figures 1-3, wherein the air-intake opening portion 10 is formed substantially parallel to the vent surface of the heat exchanger 7, but is offset thereto so as to protrude laterally by the distance L2 (Figure 3).

Table 1 on page 16 shows that a significant sound deadening effect can be obtained if the amount of the offset is at least 50%. On the other hand, it was found that the air flow rate was not substantially diminished for an offset of 100% (paragraph bridging pages 17-18). Thus, by laterally offsetting the air-intake opening portion but providing the same in a surface which is substantially parallel to the vent surface of the heat exchanger, one can significantly reduce the sound volume emanating from the air-intake opening, but without a significant reduction in the air flow rate reaching the heat exchanger.

Claims 1-8, 11, and 12 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. patent 6,745,860 (Yabe), particularly with respect to Figure 20 thereof. In particular, Figure 20 of Yabe discloses a construction machine having an engine 34 and a heat exchanger 17, where the cooling air is introduced via an opening 45 in the body cover, which opening is oriented almost perpendicular to the surface of the heat exchanger 17. As a result, the air entering the opening 45 must turn by almost 90° to reach the heat exchanger.

It may be appreciated that amended Claims 1 and 5, and their dependent claims, clearly define over Yabe. As already explained, the claims now recite that the offset opening portion is formed in a surface of the body cover which is substantially parallel to a vent surface of the heat exchanger. As has also been explained, this provides noise reduction without substantial reduction in the air flow rate since the air is not required to make a sharp turn before reaching the heat exchanger. In contrast, the air-intake opening 45 in Figure 20 of

Yabe is formed in a surface of the body cover which is substantially perpendicular to the vent surface of the heat exchanger and so the air must turn sharply to reach the heat exchanger.

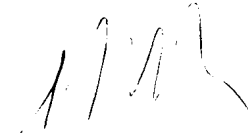
Thus Yabe does not teach the claimed invention.

Claim 9 depends from Claim 5 and further recites a shield material between the air-intake opening portion and the vent surface of the heat exchanger. An example of this may be the sound absorbing material affixed to each of the partitioning plates 16a and 16b (page 18, lines 14-17). Claims 9 and 10 (the mention of Claims 8 and 9 in paragraph 8 of the Office Action is believed to be a typographical error) were rejected under 35 U.S.C. § 103 as being obvious over Yabe in view of Nakada et al, which was cited to teach an intake duct having a shield with sound-absorbing material. However, it is noted that the air intake in Nakada et al is not offset to the heat exchanger, and so Nakada et al would provide no teaching for overcoming the shortcomings of Yabe with respect to Claim 5 from which Claims 9 and 10 depend.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Robert T. Pous
Registration No. 29,099
Attorney of Record

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413-2220
(OSMMN 06/04)

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